FIG.1A

```
CAAAAACAGCAACAGAAAGCAGGACGTGAGACTTCTACCTGCTCACTCAGAATCATTTCT 60

GCACCAACCATGGCCACGTTTGTGGAGCTCAGTACCAAAGCCAAGATGCCCATTGTGGGC 120
        M  A  T  F  V  E  L  S  T  K  A  K  M  P  I  V  G   17
CTGGGCACTTGGAAGTCTCCTCTCGGCAAAGTGAAAGAAGCAGTGAAGGTGGCCATTGAT 180
L  G  T  W  K  S  P  L  G  K  V  K  E  A  V  K  V  A  I  D   37
GCAGGATATCGGCACATTGACTGTGCCTATGTCTATCAGAATGAACATGAAGTGGGGGAA 240
A  G  Y  R  H  I  D  C  A  Y  V  Y  Q  N  E  H  E  V  G  E   57
GCCATCCAAGAGAAGATCCAAGAGAAGGCTGTGAAGCGGGAGGACCTGTTCATCGTCAGC 300
A  I  Q  E  K  I  Q  E  K  A  V  K  R  E  D  L  F  I  V  S   77
AAGTTGTGGCCCACTTCCAGATCGAGAAGCTCTTGAACAAACCTGGACTGAAATATAAAC 360
K  L  W  P  T  S  R  S  R  S  S  *                           88
```

FIG.1B

CAGTGACTAACCAGGTTGAGTGTCACCCATACCTCACGCAGGAGAAACTGATCCAGTACT 420

GCCACTCCAAGGGCATCACCGTTACGGCCTACAGCCCCCTGGGCTCTCCGGATAGACCTT 480

GGGCCAAGCCAGAAGACCCTTCCCTGCTGGAGGATCCCAAGATTAAGGAGATTGCTGCAA 540

AGCACAAAAAAACCGCAGCCCAGGTTCTGATCCGTTTCCATATCCAGAGGAATGTGATTG 600

TCATCCCCAAGTCTGTGACACCAGCACGCATTGTTGAGAACATTCAGGTCTTTGACTTTA 660

AATTGAGTGATGAGGAGATGGCAACCATACTCAGCTTCAACAGAAACTGGAGGGCCTGTA 720

ACGTGTTGCAATCCTCTCATTTGGAAGACTATCCCTTCGATGCAGAATATTGAGGTTGAA 780

FIG.1C

TCTCCTGGTGAGATTATACAGGAGATTCTCTTTCTTCGCTGAAGTGTGACTACCTCCACT 840

CATGTCCCATTTTAGCCAAGCTTATTTAAGATCACAGTGAACTTAGTCCTGTTATAGACG 900

AGAATCGAGGTGCTGTTTTAGACATTTATTTCTGTATGTTCAACTAGGATCAGAATATCA 960

CAGAAAAGCATGGCTTGAATAAGGAAATGACAATTTTTTCCACTTATCTGATCAGAACAA 1020

ATGTTTATTAAGCATCAGAAACTCTGCCAACACTGAGGATGTAAAGATCAATAAAAAAAA 1080

TAATAATCAT 1090

FIG.2A

```
CAAAAACAGCAACAGAAAGCAGGACGTGAGACTTCTACCTGCTCACTCAGAATCATTTCT 60

GCACCAACCATGGCCACGTTTGTGGAGCTCAGTACCAAAGCCAAGATGCCCATTGTGGGC 120
        M  A  T  F  V  E  L  S  T  K  A  K  M  P  I  V  G   17
CTGGGCACTTGGAAGTCTCCTCTCGGCAAAGTGAAAGAAGCAGTGAAGGTGGCCATTGAT 180
L  G  T  W  K  S  P  L  G  K  V  K  E  A  V  K  V  A  I  D   37
GCAGGATATCGGCACATTGACTGTGCCTATGTCTATCAGAATGAACATGAAGTGGGGGAA 240
A  G  Y  R  H  I  D  C  A  Y  V  Y  Q  N  E  H  E  V  G  E   57
GCCATCCAAGAGAAGATCCAAGAGAAGGCTGTGAAGCGGGAGGACCTGTTCATCGTCAGC 300
A  I  Q  E  K  I  Q  E  K  A  V  K  R  E  D  L  F  I  V  S   77
AAGTTGTGGCCCACTTTCTTTGAGAGACCCCTTGTGAGGAAAGCCTTTGAGAAGACCCTC 360
K  L  W  P  T  F  F  E  R  P  L  V  R  K  A  F  E  K  T  L   97
AAGGACCTGAAGCTGAGCTATCTGGACGTCTATCTTATTCACTGGCCACAGGGATTCAAG 420
K  D  L  K  L  S  Y  L  D  V  Y  L  I  H  W  P  Q  G  F  K  117
TCTGGGGATGACCTTTTCCCCAAAGATGATAAAGGTAATGCCATCGGTGGAAAAGCAACG 480
S  G  D  D  L  F  P  K  D  D  K  G  N  A  I  G  G  K  A  T  137
```

FIG.2B

```
TTCTTGGATGCCTGGGAGGCCATGGAGGAGCTGGTGGATGAGGGGCTGGTGAAAGCCCTT 540
F  L  D  A  W  E  A  M  E  E  L  V  D  E  G  L  V  K  A  L   157
GGGGTCTCCAATTTCAGCCACTTCCAGATCGAGAAGCTCTTGAACAAACCTGGACTGAAA 600
G  V  S  N  F  S  H  F  Q  I  E  K  L  L  N  K  P  G  L  K   177
TATAAACCAGTGACTAACCAGGTTGAGTGTCACCCATACCTCACGCAGGAGAAACTGATC 660
Y  K  P  V  T  N  Q  V  E  C  H  P  Y  L  T  Q  E  K  L  I   197
CAGTACTGCCACTCCAAGGGCATCACCGTTACGGCCTACAGCCCCCTGGGCTCTCCGGAT 720
Q  Y  C  H  S  K  G  I  T  V  T  A  Y  S  P  L  G  S  P  D   217
AGACCTTGGGCCAAGCCAGAAGACCCTTCCCTGCTGGAGGATCCCAAGATTAAGGAGATT 780
R  P  W  A  K  P  E  D  P  S  L  L  E  D  P  K  I  K  E  I   237
GCTGCAAAGCACTCCCCAAGTCTGTGACACCAGCACGCATTGTTGAGAACATTCAGGTCT 840
A  A  K  H  S  P  S  L  *                                     245
```

FIG.2C

TTGACTTTAAATTGAGTGATGAGGAGATGGCAACCATACTCAGCTTCAACAGAAACTGGA 900

GGGCCTGTAACGTGTTGCAATCCTCTCATTTGGAAGACTATCCCTTCGATGCAGAATATT 960

GAGGTTGAATCTCCTGGTGAGATTATACAGGAGATTCTCTTTCTTCGCTGAAGTGTGACT 1020

ACCTCCACTCATGTCCCATTTTAGCCAAGCTTATTTAAGATCACAGTGAACTTAGTCCTG 1080

TTATAGACGAGAATCGAGGTGCTGTTTTAGACATTTATTTCTGTATGTTCAACTAGGATC 1140

AGAATATCACAGAAAAGCATGGCTTGAATAAGGAAATGACAATTTTTTCCACTTATCTGA 1200

TCAGAACAAATGTTTATTAAGCATCAGAAACTCTGCCAACACTGAGGATGTAAAGATCAA 1260

TAAAAAAAATAATAATCAT 1279

FIG.3A

```
          1                                                          60
ARLV1  CAAAAACAGCAACAG AAAGCAGGACGTGAG ACTTCTACCTGCTCA CTCAGAATCATTTCT
ARLV2  CAAAAACAGCAACAG AAAGCAGGACGTGAG ACTTCTACCTGCTCA CTCAGAATCATTTCT
ARL    CAAAAACAGCAACAG AAAGCAGGACGTGAG ACTTCTACCTGCTCA CTCAGAATCATTTCT

          61                                                         120
ARLV1  GCACCAACCATGGCC ACGTTTGTGGAGCTC AGTACCAAAGCCAAG ATGCCCATTGTGGGC
ARLV2  GCACCAACCATGGCC ACGTTTGTGGAGCTC AGTACCAAAGCCAAG ATGCCCATTGTGGGC
ARL    GCACCAACCATGGCC ACGTTTGTGGAGCTC AGTACCAAAGCCAAG ATGCCCATTGTGGGC

          121                                                        180
ARLV1  CTGGGCACTTGGAAG TCTCCTCTCGGCAAA GTGAAAGAAGCAGTG AAGGTGGCCATTGAT
ARLV2  CTGGGCACTTGGAAG TCTCCTCTCGGCAAA GTGAAAGAAGCAGTG AAGGTGGCCATTGAT
ARL    CTGGGCACTTGGAAG TCTCCTCTCGGCAAA GTGAAAGAAGCAGTG AAGGTGGCCATTGAT
```

FIG.3B

```
      181                                                        240
ARLV1 GCAGGATATCGGCAC ATTGACTGTGCCTAT GTCTATCAGAATGAA CATGAAGTGGGGGAA
ARLV2 GCAGGATATCGGCAC ATTGACTGTGCCTAT GTCTATCAGAATGAA CATGAAGTGGGGGAA
ARL   GCAGGATATCGGCAC ATTGACTGTGCCTAT GTCTATCAGAATGAA CATGAAGTGGGGGAA

      241                                                        300
ARLV1 GCCATCCAAGAGAAG ATCCAAGAGAAGGCT GTGAAGCGGGAGGAC CTGTTCATCGTCAGC
ARLV2 GCCATCCAAGAGAAG ATCCAAGAGAAGGCT GTGAAGCGGGAGGAC CTGTTCATCGTCAGC
ARL   GCCATCCAAGAGAAG ATCCAAGAGAAGGCT GTGAAGCGGGAGGAC CTGTTCATCGTCAGC

      301                                                        360
ARLV1 AAGTTGTGGCCCACT T-------------- ---------------- ----------------
ARLV2 AAGTTGTGGCCCACT TTCTTTGAGAGACCC CTTGTGAGGAAAGCC TTTGAGAAGACCCTC
ARL   AAGTTGTGGCCCACT TTCTTTGAGAGACCC CTTGTGAGGAAAGCC TTTGAGAAGACCCTC
```

FIG.3C

```
        361                                                         420
ARLV1   ---------------- ---------------- ---------------- ----------------
ARLV2   AAGGACCTGAAGCTG  AGCTATCTGGACGTC  TATCTTATTCACTGG  CCACAGGGATTCAAG
ARL     AAGGACCTGAAGCTG  AGCTATCTGGACGTC  TATCTTATTCACTGG  CCACAGGGATTCAAG

        421                                                         480
ARLV1   ---------------- ---------------- ---------------- ----------------
ARLV2   TCTGGGGATGACCTT  TTCCCCAAAGATGAT  AAAGGTAATGCCATC  GGTGGAAAAGCAACG
ARL     TCTGGGGATGACCTT  TTCCCCAAAGATGAT  AAAGGTAATGCCATC  GGTGGAAAAGCAACG

        481                                                         540
ARLV1   ---------------- ---------------- ---------------- ----------------
ARLV2   TTCTTGGATGCCTGG  GAGGCCATGGAGGAG  CTGGTGGATGAGGGG  CTGGTGAAAGCCCTT
ARL     TTCTTGGATGCCTGG  GAGGCCATGGAGGAG  CTGGTGGATGAGGGG  CTGGTGAAAGCCCTT
```

FIG.3D

```
      541                                                          600
ARLV1 ---------------- --------CCAGATC GAGAAGCTCTTGAAC AAACCTGGACTGAAA
ARLV2 GGGGTCTCCAATTTC AGCCACTTCCAGATC GAGAAGCTCTTGAAC AAACCTGGACTGAAA
ARL   GGGGTCTCCAATTTC AGCCACTTCCAGATC GAGAAGCTCTTGAAC AAACCTGGACTGAAA

      601                                                          660
ARLV1 TATAAACCAGTGACT AACCAGGTTGAGTGT CACCCATACCTCACG CAGGAGAAACTGATC
ARLV2 TATAAACCAGTGACT AACCAGGTTGAGTGT CACCCATACCTCACG CAGGAGAAACTGATC
ARL   TATAAACCAGTGACT AACCAGGTTGAGTGT CACCCATACCTCACG CAGGAGAAACTGATC

      661                                                          720
ARLV1 CAGTACTGCCACTCC AAGGGCATCACCGTT ACGGCCTACAGCCCC CTGGGCTCTCCGGAT
ARLV2 CAGTACTGCCACTCC AAGGGCATCACCGTT ACGGCCTACAGCCCC CTGGGCTCTCCGGAT
ARL   CAGTACTGCCACTCC AAGGGCATCACCGTT ACGGCCTACAGCCCC CTGGGCTCTCCGGAT
```

FIG.3E

```
      721                                                        780
ARLV1 AGACCTTGGGCCAAG CCAGAAGACCCTTCC CTGCTGGAGGATCCC AAGATTAAGGAGATT
ARLV2 AGACCTTGGGCCAAG CCAGAAGACCCTTCC CTGCTGGAGGATCCC AAGATTAAGGAGATT
ARL   AGACCTTGGGCCAAG CCAGAAGACCCTTCC CTGCTGGAGGATCCC AAGATTAAGGAGATT

      781                                                        840
ARLV1 GCTGCAAAGCACAAA AAAACCGCAGCCCAG GTTCTGATCCGTTTC CATATCCAGAGGAAT
ARLV2 GCTGCAAAGCAC--- --------------- --------------- ---------------
ARL   GCTGCAAAGCACAAA AAAACCGCAGCCCAG GTTCTGATCCGTTTC CATATCCAGAGGAAT

      841                                                        900
ARLV1 GTGATTGTCATCCCC AAGTCTGTGACACCA GCACGCATTGTTGAG AACATTCAGGTCTTT
ARLV2 ----------TCCCC AAGTCTGTGACACCA GCACGCATTGTTGAG AACATTCAGGTCTTT
ARL   GTGATTGTCATCCCC AAGTCTGTGACACCA GCACGCATTGTTGAG AACATTCAGGTCTTT
```

FIG.3F

```
        901                                                        960
ARLV1 GACTTTAAATTGAGT GATGAGGAGATGGCA ACCATACTCAGCTTC AACAGAAACTGGAGG
ARLV2 GACTTTAAATTGAGT GATGAGGAGATGGCA ACCATACTCAGCTTC AACAGAAACTGGAGG
ARL   GACTTTAAATTGAGT GATGAGGAGATGGCA ACCATACTCAGCTTC AACAGAAACTGGAGG

        961                                                        1020
ARLV1 GCCTGTAACGTGTTG CAATCCTCTCATTTG GAAGACTATCCCTTC GATGCAGAATATTGA
ARLV2 GCCTGTAACGTGTTG CAATCCTCTCATTTG GAAGACTATCCCTTC GATGCAGAATATTGA
ARL   GCCTGTAACGTGTTG CAATCCTCTCATTTG GAAGACTATCCCTTC GATGCAGAATATTGA

        1021                                                       1080
ARLV1 GGTTGAATCTCCTGG TGAGATTATACAGGA GATTCTCTTTCTTCG CTGAAGTGTGACTAC
ARLV2 GGTTGAATCTCCTGG TGAGATTATACAGGA GATTCTCTTTCTTCG CTGAAGTGTGACTAC
ARL   GGTTGAATCTCCTGG TGAGATTATACAGGA GATTCTCTTTCTTCG CTGAAGTGTGACTAC
```

FIG.3G

```
      1081                                                        1140
ARLV1 CTCCACTCATGTCCC ATTTTAGCCAAGCTT ATTTAAGATCACAGT GAACTTAGTCCTGTT
ARLV2 CTCCACTCATGTCCC ATTTTAGCCAAGCTT ATTTAAGATCACAGT GAACTTAGTCCTGTT
ARL   CTCCACTCATGTCCC ATTTTAGCCAAGCTT ATTTAAGATCACAGT GAACTTAGTCCTGTT

      1141                                                        1200
ARLV1 ATAGACGAGAATCGA GGTGCTGTTTTAGAC ATTTATTTCTGTATG TTCAACTAGGATCAG
ARLV2 ATAGACGAGAATCGA GGTGCTGTTTTAGAC ATTTATTTCTGTATG TTCAACTAGGATCAG
ARL   ATAGACGAGAATCGA GGTGCTGTTTTAGAC ATTTATTTCTGTATG TTCAACTAGGATCAG

      1201                                                        1260
ARLV1 AATATCACAGAAAAG CATGGCTTGAATAAG GAAATGACAATTTTT TCCACTTATCTGATC
ARLV2 AATATCACAGAAAAG CATGGCTTGAATAAG GAAATGACAATTTTT TCCACTTATCTGATC
ARL   AATATCACAGAAAAG CATGGCTTGAATAAG GAAATGACAATTTTT TCCACTTATCTGATC
```

FIG.3H

```
        1261                                                    1320
ARLV1   AGAACAAATGTTTAT TAAGCATCAGAAACT CTGCCAACACTGAGG ATGTAAAGATCAATA
ARLV2   AGAACAAATGTTTAT TAAGCATCAGAAACT CTGCCAACACTGAGG ATGTAAAGATCAATA
ARL     AGAACAAATGTTTAT TAAGCATCAGAAACT CTGCCAACACTGAGG ATGTAAAGATCAATA

        1321
ARLV1   AAAAAAATAATAATC AT    1090
ARLV2   AAAAAAATAATAATC AT    1279
ARL     AAAAAAATAATAATC AT    1337
```

FIG.4A

```
      1                                                          60
ARLV1 MATFVELSTKAKMPI VGLGTWKSPLGKVKE AVKVAIDAGYRHIDC AYVYQNEHEVGEAIQ
ARLV2 MATFVELSTKAKMPI VGLGTWKSPLGKVKE AVKVAIDAGYRHIDC AYVYQNEHEVGEAIQ
ARL   MATFVELSTKAKMPI VGLGTWKSPLGKVKE AVKVAIDAGYRHIDC AYVYQNEHEVGEAIQ

      61                                                         120
ARLV1 EKIQEKAVKREDLFI VSKLWPT-------- ---------------- ----------------
ARLV2 EKIQEKAVKREDLFI VSKLWPTFFERPLVR KAFEKTLKDLKLSYL DVYLIHWPQGFKSGD
ARL   EKIQEKAVKREDLFI VSKLWPTFFERPLVR KAFEKTLKDLKLSYL DVYLIHWPQGFKSGD

      121                                                        180
ARLV1 ---------------- ---------------- ---------------- ----------------
ARLV2 DLFPKDDKGNAIGGK ATFLDAWEAMEELVD EGLVKALGVSNFSHF QIEKLLNKPGLKYKP
ARL   DLFPKDDKGNAIGGK ATFLDAWEAMEELVD EGLVKALGVSNFSHF QIEKLLNKPGLKYKP
```

FIG.4B

```
      181                                                        240
ARLV1 ---------- ---------- ---------- ----------
ARLV2 VTNQVECHPYLTQEK LIQYCHSKGITVTAY SPLGSPDRPWAKPED PSLLEDPKIKEIAAK
ARL   VTNQVECHPYLTQEK LIQYCHSKGITVTAY SPLGSPDRPWAKPED PSLLEDPKIKEIAAK

      241                                                        300
ARLV1 ---------- ---------- ---------- ----------
ARLV2 H--------- ---------- ---------- ----------
ARL   HKKTAAQVLIRFHIQ RNVIVIPKSVTPARI VENIQVFDFKLSDEE MATILSFNRNWRACN

      301
ARLV1 ---------- -SRSRSS 88
ARLV2 ---------- -SPSL-- 245
ARL   VLQSSHLEDYPFDAE Y------ 316
```